Check List **5**(1): 118–121, 2009.
ISSN: 1809-127X

NOTES ON GEOGRAPHIC DISTRIBUTION

Reptilia, Colubridae, *Helicops angulatus*: distribution extension and rediscovery in the state of Ceará

Igor Joventino Roberto [1]
Samuel Cardozo Ribeiro [2]
Morgana Maria de Sousa Delfino [3]
Waltécio de Oliveira Almeida [2]

[1] *Associação de Pesquisa e Preservação de Ecossistemas Aquáticos, Programa de Conservação da Biodiversidade. Praia de Iparana s/n, SESC Iparana. CEP 61627-010. Caucaia, Ceará, Brazil.*
E-mail: igorjoventino@yahoo.com.br

[2] *Universidade Regional do Cariri, Laboratório de Zoologia, Departamento de Química Biológica. R. Cel. Antônio Luiz, 1161. CEP 63105-000. Crato, Ceará, Brazil.*

[3] *Universidade Regional do Cariri, Laboratório de Zoologia, Departamento de Ciências Biológicas. R. Cel. Antônio Luiz, 1161. CEP 63105-000. Crato, Ceará, Brazil.*

The genus *Helicops* comprises 17 species distributed east of the Andes, in Venezuela, Argentina, Paraguay, Uruguay, Colombia, Bolivia, Peru, Brazil, Ecuador, Guiana, French Guiana, Suriname, and Trinidad (Peters and Orejas-Miranda 1970; Cunha and Nascimento 1993; Bérnils et al. 2007; Uetz 2008). Ten species have been recorded from Brazil: *Helicops angulatus*, *H. carinicaudus*, *H. gomesi*, *H. hagmanni*, *H. infrataeniatus*, *H. leopardinus*, *H. modestus*, *H. polylepis*, *H. tapajonicus* and *H. trivittatus* (SBH 2008).

Helicops angulatus is a nocturnal species that inhabits still or slow flowing water in small dams and ponds in forested and disturbed areas and savannas (Martins and Oliveira 1998; Ford and Ford 2002; França et al. 2006). This species occurs in Venezuela, Guiana, Suriname, Colombia, Brazil, Bolivia, Peru, Trinidad, Ecuador and French Guiana (Cunha and Nascimento 1993; Uetz, 2008). In Brazil *H. angulatus* have been reported for Acre, Amazonas, Pará, Rondônia, Roraima, Goiás, Tocantins, Distrito Federal, Maranhão, Piauí, Paraíba, Alagoas and Bahia states (Martins and Oliveira 1998; Vitt et al. 2002; Freitas 2003; França et al. 2006; França and Araújo 2007; Frota 2005; Silva et al. 2006; Santana et al. 2008).

For state of Ceará, there is a historical record of *H. angulatus* in a species list deposited in Rocha Museum, municipality of Fortaleza (Gomes 1918). However, in 1915 Francisco Dias da Rocha sent this specimen to *Instituto Butantan* in São Paulo, but no collection data came with it other than it was collected in Ceará. Thus, this record was considered uncertain by Gomes (1918), who reported only that this specimen was from the northern region of Brazil. Thirty years later, Rocha (1948) published a list of the reptiles from Ceará, and cited *H. angulatus*, without reference to a specific locality for the occurrence of the species, neither to a voucher specimen. It is possible that was the same specimen sent to the *Instituto Butantan* in 1915.

In 5 May 2008, a specimen of *Helicops angulatus* (dorsal scale rows 19; 119 ventral scales, 79 subcaudals; snout-vent length (SVL) 320 mm; tail-length (TL) 164 mm) was collected manually in a small pond inside a sugar cane and rice plantation, in the *Chapada do Araripe*, municipality of Crato (07°13'18.24" S, 39°23'42.40" W; 407m), southern region of the state of Ceará, Brazil (Figure 1). It is a very disturbed site, and in the past comprised the humid forests in the slopes of the Chapada do Araripe, today the only small source of water in the area came from the Granjeiro spring located in the gallery forest in the region.

Check List **5**(1): 118–121, 2009.
ISSN: 1809-127X

NOTES ON GEOGRAPHIC DISTRIBUTION

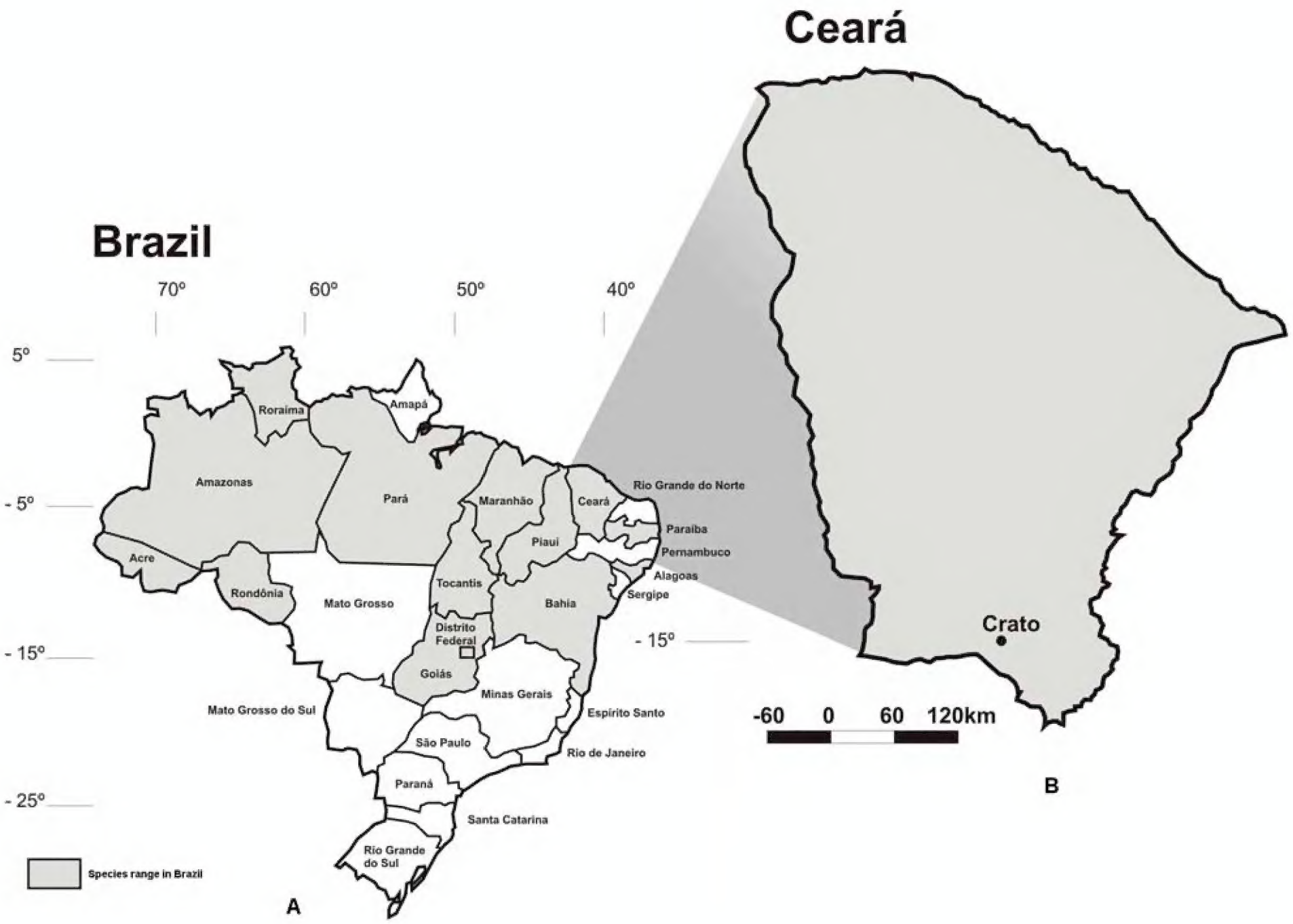

Figure 1. Distribution recognized for *Helicops angulatus* in Brazilian territory (A); Map showing the new distribution record for the state of Ceará, municipality of Crato, northeastern Brazil (B).

Figure 2. Specimen of *Helicops angulatus* (LZ-URCA 492) collected at Chapada do Araripe, CE

Check List **5**(1): 118–121, 2009.
ISSN: 1809-127X

NOTES ON GEOGRAPHIC DISTRIBUTION

The specimen was collected, fixed in 10% formalin for 48 hours, and conserved in 70% ethanol. After this procedure the specimen was deposited in the Laboratory of Zoology at the *Universidade Regional do Cariri* - URCA (LZ-URCA 492 – Figure 2).

The Chapada do Araripe region is inserted in the *Caatinga* biome, Northeastern Brazil, and it is composed with savannas vegetation in the plateau, *caatinga* dry forest and humid forest in the slopes. The region is considered an area of extreme priority for the conservation of the *Caatinga* biome (MMA 2007), containing a high biodiversity of flora and fauna (see Coelho and Silva 1996; Borges-Nojosa and Caramaschi 2003), including the critically endangered bird, the Araripe Manakin *Antilophia bookermanni*. Until very recently the only species of *Helicops* recorded in the *Caatinga* biome was *Helicops leopardinus* (Rodrigues 2003). Our finding represents the first vouchered record of *H. angulatus* for the *Caatinga* biome and for the state of Ceará, and extends the species' range ca. 502 km west from nearest knowledge locality, the *Mata do Buraquinho*, a remnants Atlantic forest in the municipality of João Pessoa, state of Paraíba (7°08'42" S, 34°51' 54" W) (Santana et al. 2008).

Therefore, the present record should be considered as a confirmation for the species in the state of Ceará, as previously reported (Rocha 1948). Nevertheless, this record brings the first precise and documented (voucher specimen LZ-URCA 492) information of distribution of the species in the state of Ceará and in the entire *Caatinga* biome.

Acknowledgements
We are grateful to the *Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico* – FUNCAP for the scholarship awarded to SCR, to Theóphilo Michel Álvares Cabral Bezerra for drawing the map and two annonymous reviewers for sugestions.

Literature cited

Bérnils, R. S., A. R. Giraudo, S. Carreira, and S. Z. Cechin. 2007. Répteis das porções subtropical e temperada da região Neotropical. Ciência & Ambiente 35:101-136.

Borges-Nojosa, D. M. and U. Caramaschi. 2003. Composição e análise comparativa da diversidade das afinidades biogeográficas dos lagartos e anfisbenídeos (Squamata) dos brejos nordestinos; p. 463-512 In I. R. Leal, M. Tabarelli and J. M. C. Silva (ed.), Ecologia e Conservação da Caatinga. Recife. Brasil: Universidade Federal de Pernambuco.

Coelho, G. and W. Silva. 1996. A new species of *Antilophia* (Passeriformes: Pipridae) from Chapada do Araripe, Ceará, Brasil. Ararajuba 6(2): 81-84.

Cunha, O. R. and F. P. Nascimento. 1993. Ofídios da Amazônia. As cobras da região leste do Pará. Boletim do Museu Paraense Emílio Goeldi (Série Zoologia). 9(1): 1-191.

Ford, N. B. and D. F. Ford. 2002. Notes on the South American water snake *Helicops angulatus* (Squamata: Colubridae) in Nariwa swamp Trinidad. Caribbean Journal of Science 38(12): 129-132.

França, F. G. R. and A. F. B. Araújo. 2007. Are there co-occurence patterns that structure snake communities in central Brazil? Brazilian Journal of Biology 67(1): 33-40.

França, F. G. R., D. O. Mesquita, and G. R. Colli. 2006. A check list of snakes from amazonian savannas in Brazil, housed in the Coleção Herpetológica da Universidade de Brasília, with new distribution records. Occasional papers Sam Noble Oklahoma Museum of Natural History 17: 1-13.

Freitas, M. A. 2003. Serpentes brasileiras. Bahia: Lauro de Freitas. 160p.

Frota, J. G. 2005. Nova espécie de *Helicops* Wagler, 1830 (Serpentes, Colubridae) do Rio Tapajós, Amazônia, Brasil. Phyllomedusa 4: 61-68.

Gomes, J. F. 1918. Contribuição para o conhecimento dos ophidios do Brasil. II. Ophidios do Museu Rocha (Ceará). Revista do Museu Paulista 10: 503-527.

Martins, M. and M. E. Oliveira. 1998. Natural history of snakes in forests of the Manaus region, central Amazonia, Brazil. Herpetological Natural History 6(2): 78-150.

Peters, J. A. and B. Orejas-Miranda. 1970. Catalogue of the Neotropical Squamata: Part I. Snakes. Bulletin of the United States National Museum 297: 1-347.

Check List **5**(1): 118–121, 2009.
ISSN: 1809-127X

NOTES ON GEOGRAPHIC DISTRIBUTION

MMA. 2007. Áreas prioritárias para a conservação, uso sustentável e repartição de benefícios da biodiversidade brasileira: atualização - Portaria MMA Nº 09, 23 de janeiro de 2007. Série Biodiversidade (31). Brasília: MMA/SBF. 300 p.

Rocha, F. D. 1948. Subsídio para o estudo da fauna cearense. (Catálogo das espécies animais por mim coligidas e notadas). Revista do Instituto do Ceará 62: 102-138.

Rodrigues, M. T. 2003. Herpetofauna da Caatinga; p. 181-236 *In* I. R. Leal, M. Tabarelli and J. M. C. Silva (ed.), Ecologia e Conservação da Caatinga. Recife. Brasil: Universidade Federal de Pernambuco.

Santana, G. G., W. L. S. Vieira, A. G. Pereira-Filho; F. R. Delfim; Y. C. C. Lima; K. S. Vieira. Herpetofauna em um fragmento de Floresta Atlântica no estado da Paraíba, Região Nordeste do Brasil. 2008. Biotemas 21 (1): 75-84.

Silva, S. T., U. G. Silva, A. B. Sena, and F. A. C. Nascimento. 2006. A biodiversidade da Mata Atlântica alagoana: anfíbios e répteis; p. 65-77 *In* F. B. P. Moura (ed.). A Mata Atlântica em Alagoas. Maceió: EDUFAL.

SBH. 2008. Brazilian reptiles - List of species. Sociedade Brasileira de Herpetologia. Accessible at http://www.sbherpetologia.org.br. Captured on 17 April 2008.

Uetz, P. 2008. TIGR. Reptile database. Accessible at http://www.reptile-database.org. Captured on July 2008.

Vitt, L. J., J. P. Caldwell, G. R. Colli, A. A. Garda, D. O. Mesquita, F. G. R. França, and S. F. Balbino. 2002. Um guia fotográfico dos répteis e anfíbios da região do Jalapão no Cerrado brasileiro. Norman, Oklahoma: Special Publications in Herpetology. Sam Noble Oklahoma Museum of Natural History 1: 1-17.

Received November 2008
Accepted February 2009
Published online March 2009